Homework 5

CMSY-199, Spring 2014

Upload your solution to the Canvas course website as a zip archive file prior to the start of class on Monday, April 21.

A restaurant has 20 tables, 10 of which can seat up to 2 people, 6 of which can seat up to 4 people, and 4 of which can seat up to 6 people. The tables are bolted to the floor, so they cannot be rearranged. Assume that the manager wants to seat parties as close to first-come, first-serve as possible, but will make exceptions according to table size (e.g., if a 4-person party is next, but only 2-person tables are available, then parties of 2 can move up in the line). Implement a simulation, based on the size, arrival time, and service time from the Parties.csv file, to:

1. Determine the mean waiting time per party and the mean waiting time per person if parties are restricted to sit at the most appropriate table for them (e.g., no 2-person party is allowed to sit at a 4-person table, even if all the 2-person tables are full and a 4-person table is empty).

2. Determine the mean waiting time per party and the mean waiting time per person if the next party in line is always allowed to sit at the smallest table that can accommodate it.